Claims Listing:

1. (Canceled)

2. (Currently amended) A device as recited in claim [[1]] 32, wherein the distribution section (26, 26') is configured to distribute the incoming gas flow within the individual gas flow passages (11a, 11b).

3. (Original) A device as recited in claim 2, wherein the distribution section (26,26') is configured to bring about a substantially uniform gas flow within the individual gas flow passages (11a, 11b).

4. – 12. (Canceled

13. (Currently amended) A device as recited in claim [[1]] 32, wherein the distribution section (26, 26') and the gas flow passage section (27, 27') form separate units arranged together in such a way that gas can flow from one section to the other with the distribution section (26, 26') and the gas flow passage section (27, 27') being joined to each other.

14. (Currently amended) A device as recited in claim [[13]] 33, wherein the distribution section (26) comprises a wall structure forming: at least one first channel (29) to which the incoming gas flow is fed; and a plurality of second channels (30) that extend from said first channel (29) and which second channels (30) are open to the gas flow passages (11a, 11b) that are configured for an incoming gas flow.

15. (Original) A device as recited in claim 14, wherein the first channel (29) is closed to the gas flow passages (11a, 11b).

16. (Currently amended) A device as recited in claim 14, wherein the wall structure forms a plurality of third channels (32) ~~that are open to the gas flow passages (11a, 11b) that are intended for an outgoing gas flow, preferably said third channels (32) are formed between said second channels (30) using common walls~~ which form said set of channels that are open to the outlet gas flow passageways (11a, 11b).

17. (Currently amended) A device as recited in claim [[13]] 34, wherein the distribution section (26') comprises a zigzag shaped wall structure forming a first and a second set of channels (40, 41), one set on each side of said zigzag shaped structure, wherein said first set of channels (40) are open to the gas flow passages (11a, 11b) that are intended for an incoming gas flow and said second set of channels (41) are open to the gas flow passages (11a, 11b) that are intended for an outgoing gas flow, and wherein the incoming gas flow is fed to the first set of channels (40).

18. (Currently amended) A device as recited in claim [[13]] 32, wherein the distribution section (26, 26') in at least one certain direction exhibits a substantially unchanged cross section.

19. (Currently amended) A device as recited in claim [[18]] 13, wherein the distribution section (26, 26') is produced by extruding means.

20. (Original) A device as recited in claim 13, wherein the distribution section (26, 26') and the gas flow passage section (27, 27') are made out of a ceramic material, and the sections are joined to each other by sintering means.

21. (Canceled)

22. (Currently amended) A device as recited in claim [[1]] 32, wherein the device comprises at least one filtering section (36), said filtering section (36) being adapted to remove particulates from the gas.

23. (Currently amended) A device as recited in claim [[1]] 32, wherein at least a part of the surfaces in the body (3) that are in contact with the gas flow are coated with a catalyst material.

24. (Currently amended) A device as recited in claim [[1]] 32, wherein at least a part of the surfaces in the body (3) that are in contact with the gas flow are coated with an adsorption/desorption agent.

25. (Currently amended) A device as recited in claim [[1]] 32, wherein the device comprises means for controlling the temperature of the gas flow in the body (3) and taking the form of at least one of (i) a heat generator arranged in the body (3), (ii) cooling flanges arranged in the body (3), (iii) an arrangement configured to introduce cooling air into the body (3), and (iv) a system for controlling the composition of the incoming gas flow.

26. (Currently amended) A device as recited in claim 25, wherein the system for controlling the composition of the incoming gas flow comprises at least one of (i) an arrangement for introduction of oxidizing species~~, such as air,~~ into the incoming gas flow, and (ii) an arrangement for introduction of oxidizable species~~, such as hydrocarbons,~~ into the incoming gas flow.

27. (Original) A device as recited in claim 25, wherein the device is arranged in connection to a combustion engine, and said system for controlling the composition of the incoming gas flow comprises an arrangement for controlling the operation of the combustion engine, which operation in turn affects the composition of the incoming gas flow.

28. (Currently amended) A device as recited in claim [[1]] 32, wherein the device is adapted to purify the exhaust gas from an internal combustion engine, preferably in a mobile application.

29. – 31. (Canceled)

32. (New) A device for treatment of a gas flow, comprising at least one body (3), having a substantially cylindrical shape, said body (3) having at least one first opening (4) for entrance of an incoming gas flow to said body (3) and at least one second opening (5) for the exit of an outgoing gas flow from said body (3), said body (3) comprising

- a distribution section (26, 26') and
- a gas flow passage section (27, 27'), and wherein

said gas flow passage section (27, 27') is provided with a plurality of inlet gas flow passages (11a) and outlet gas flow passages (11b), said inlet and outlet gas flow passages (11a, 11b) extending substantially parallel to one another so as to permit heat exchange between the gas flows in adjacent passages and to cause a conversion in the composition of the gas,

- said body (3) further comprising a reversing zone (13) in fluid communication with said inlet and outlet gas flow passages (11a, 11b) such that the main direction of the gas flow in the inlet gas flow passages (11a) is essentially the opposite of the main direction of the gas flow in the outlet gas flow passages (11b),
- the distribution section (26, 26') is in communication with the first opening (4) to lead the ingoing gas flow into the inlet gas flow passages (11a) and with the second opening (5, 5') to lead the outgoing gas flow out from the outlet gas flow passages (11b), and
- the distribution section (26, 26') comprises one set of channels (30, 40) which are open to the inlet gas flow passages (11a) and another set of channels (32, 41) that are open to the outlet gas flow passages (11b),

wherein

- the distribution section (26, 26') comprises an internal cavity (20) that extends in the longitudinal direction of the body (3), said internal cavity (20) is in communication with the first opening (4) and, along said longitudinal direction, with the set of channels (30, 40) which are open to the inlet gas flow passages (11a), to lead the ingoing gas flow into the inlet gas flow passages (11a) and
- said internal cavity (20) is closed at an end (23) opposite to said first opening (4).

33. (New) A device according to claim 32, wherein said inlet gas flow passages (11a) are closed to said internal cavity (20).

34. (New) A device according to claim 32, wherein said set of channels (30, 40) which are open to the inlet gas flow passages (11a) and said set of channels (32, 41) that are open to the outlet gas flow passages (11b) are formed using common walls.

35. (New) A device for treatment of a gas flow, comprising at least one body (3), at least one first opening (4, 4') for entrance of an incoming gas flow to said body (3) and at least one second opening (5, 5') for the exit of an outgoing gas flow from said body (3), wherein said body (3) is provided with a plurality of gas flow passages (11a, 11b) arranged to permit heat exchange between the gas flows in adjacent passages, wherein the device comprises at least one distribution section (26,26') in communication with the first opening (4, 4') and with the gas flow passages (11a, 11b) to distribute the incoming gas flow to the gas flow passages (11a, 11b), and at least one gas flow passage section (27, 27') including said gas flow passages (11a, 11b), which passage section (27, 27') is adapted to permit said heat exchange between gas distributed in adjacent gas flow passages and to cause a conversion in the composition of the gas, said body (3) further comprising a reversing chamber (13) in fluid communication with said inlet and outlet gas flow passages (11a, 11b),

wherein the distribution section (26, 26') and the gas flow passage section (27, 27') form separate units that are arranged together in such a way that gas can flow from one section to the other, preferably the distribution section (26, 26') and the gas flow passage section (27, 27') are joined to each other, wherein the distribution section (26) comprises a wall structure forming: at least one first channel (29) to which the incoming gas flow is fed; and a plurality of second channels (30) that extend from said first channel (29) and which second channels (30) are open to the gas flow passages (11a, 11b) that are intended for an incoming gas flow.

36. (New) A device for treatment of a gas flow, comprising at least one body (3), at least one first opening (4, 4') for entrance of an incoming gas flow to said body (3) and at least one second opening (5, 5') for the exit of an outgoing gas flow from said body (3), wherein said body (3) is provided with a plurality of gas flow passages (11a, 11b) arranged to permit heat exchange between the gas flows in adjacent passages, wherein the device comprises at least one distribution section (26,26') in communication with the first opening (4, 4') and with the gas flow passages (11a, 11b) to distribute the incoming gas flow to the gas flow passages (11a, 11b), and at least one gas flow passage section (27, 27') including said gas flow passages (11a, 11b), which passage section (27, 27') is adapted to permit said heat exchange between gas distributed in adjacent gas flow passages and to cause a conversion in the composition of the gas, said body (3) further comprising a reversing chamber (13) in fluid communication with said inlet and outlet gas flow passages (11a, 11b),

wherein the distribution section (26, 26') and the gas flow passage section (27, 27') form separate units that are arranged together in such a way that gas can flow from one section to the other, preferably the distribution section (26, 26') and the gas flow passage section (27, 27') are joined to each other,

wherein the distribution section (26) comprises a wall structure forming: at least one first channel (29) to which the incoming gas flow is fed; and a plurality of second channels (30) that extend from said first channel (29) and which second channels (30) are open to the gas flow passages (11a, 11b) that are intended for an incoming gas flow, and

wherein the distribution section (26, 26') is in communication with the second opening (5, 5') to also lead the outgoing gas flow out from the gas flow passages (11a, 11b).